CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

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Job No.: CTCE/BBMP/W No.15/KRIDL/WMM/Gradation/2014-15

05.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Filling pot holes in Arterials and Sub- Arterials Roads in Dasarahalli, Ward No. 15, T. Dasarahalli Sub Division, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014

Date of Testing : 05.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gr **26975**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	718	718	2.7	97.3	95-100
22.4	8159	8877	32.9	67.1	60-80
11.2	4876	13753	51.0	49.0	40-60
4.75	3954	17707	65.6	34.4	25-40
2.36	3428	21135	78.4	21.6	15-30
0.600	2642	23777	88.1	11.9	8-22
0.075	1963	25740	95.4	4.6	0-8

Note:

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M/s. Civil-Tech Consultants & Engineers
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Basaveshwaranagar,
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ಟಿ.ದಾಸರಹಳ್ಳಿ ಉಪ-ವಿಭಾಗ
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05.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

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Reference : BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014

Date of Testing : 05.06.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gr **26880**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	725	725	2.7	97.3	95-100
22.4	8256	8981	33.4	66.6	60-80
11.2	4895	13876	51.6	48.4	40-60
4.75	3865	17741	66.0	34.0	25-40
2.36	3512	21253	79.1	20.9	15-30
0.600	2579	23832	88.7	11.3	8-22
0.075	2013	25845	96.1	3.9	0-8

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05.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Filling pot holes in Arterials and Sub- Arterials Roads in Dasarahalli, Ward No. 15, T. Dasarahalli Sub Division, BBMP, Bangalore.
Reference	BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	05.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	298	
4	Aggregate Impact value = percent fines	22.05	22.19	
	100* (W_2/W_1)%			22.12

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W No.15/KRIDL/WMM/Shape.T/2014-15 : 05.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager (West),** KRIDL, Bangalore.
Name of Work	: Filling pot holes in Arterials and Sub- Arterials Roads in Dasarahalli, Ward No. 15, T. Dasarahalli Sub Division, BBMP, Bangalore.
Reference	: BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Wet Mix Macadam
Date of Testing	: 05.06.2014

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.86%**

Elongation Index = **13.54%**

Result : Combined Flakiness & Elongation index **25.40%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BC/Bitumen/2014-15 12.06.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Filling pot holes in Arterials and Sub- Arterials Roads in Dasarahalli, Ward No. 15, T. Dasarahalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014
SAMPLE I/D	Pot hole filling to roads in Ward No. 15.
DATE OF TESTING	12.06.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.50
7. Bitumen content in %	5.20	5.30
8. Average	**5.25**	

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BC/Gradation/2014-15 12.06.2014

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Filling pot holes in Arterials and Sub- Arterials Roads in Dasarahalli, Ward No. 15, T. Dasarahalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/15/2014-15 Dated: 03.06.2014
SAMPLE I/D	Pot hole filling to roads in Ward No. 15.
DATE OF TESTING	12.06.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.32	9.77	9.77	90.23	79-100
9.5	38.65	8.15	17.93	82.07	70-88
4.75	64.57	13.62	31.55	68.45	53-71
2.36	93.26	19.68	51.22	48.78	42-58
1.18	45.73	9.65	60.87	39.13	34-48
0.6	42.62	8.99	69.86	30.14	26-38
0.3	33.95	7.16	77.03	22.97	18-28
0.15	31.85	6.72	83.74	16.26	12-20
0.075	48.28	10.19	93.93	6.07	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	47.54	10.04	10.04	89.96	79-100
9.5	39.68	8.38	18.42	81.58	70-88
4.75	72.57	15.33	33.75	66.25	53-71
2.36	57.29	12.10	45.85	54.15	42-58
1.18	75.34	15.91	61.76	38.24	34-48
0.6	37.85	7.99	69.75	30.25	26-38
0.3	29.42	6.21	75.96	24.04	18-28
0.15	36.57	7.72	83.69	16.31	12-20
0.075	52.29	11.04	94.73	5.27	4-10

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